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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/688,981

10/21/2003

Takeshi Higuma

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EXAMINER

LIANG, REGINA

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/688,981	Applicant(s) HIGUMA ET AL.	
	Examiner Regina Liang	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/15/06, 10/21/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 17, 19, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Young et al (US 5,075,596).

As to claim 17, Young discloses a method of driving a display panel having a plurality of light emitting elements (EL panel) based on a supply voltage supplied from a supply circuit (row drivers or column drivers), the method comprising: calculating a lighting rate of a predetermined group of light emitting elements when lighting instructions are given to the predetermined group of light emitting elements; and determining a value of the supply voltage based on the lighting rate (col. 6, line 47 to col. 7, line 47 for example).

As to claim 19, Young teaches the predetermined group of light emitting elements corresponds to one horizontal line (row electrode 10₂) of image data displayed on the display panel (col. 7, lines 1-5).

As to claim 21, Young teaches the value of the supply voltage is increased when the lighting rate increases, and is decreased when the lighting rate decreases (col. 7, lines 6-8).

Claim Rejections - 35 USC § 103

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Tachibana et al (US 6,249,268 hereinafter Tachibana).

Young does not disclose the predetermined group of light emitting elements corresponds to one frame of image data displayed on the display panel.

However, Tachibana teaches a display device having a display rate detecting means for detecting the display rate on one display picture (one frame of image data) of the display panel (col. 5, lines 20-24). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the driving circuit of Young to calculate the lighting rate of one frame of image data as taught by Tachibana so as to provide an improvement in controlling a lighting time of pixels within a predetermined time in order to display an image with multiple gradations (col. 1, lines 8-10 of Tachibana).

5. Claims 1, 3-7, 9, 11-15, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young in view of Kasai (US 2003/0058199).

As to claims 1 and 9, Young discloses a drive system for a display panel having a plurality of light emitting elements (EL panel), comprising: a driver circuit (row driver 13 and column driver 12) for driving the display panel; a pixel data storage circuit (col. 6, lines 34-39)

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for storing pixel data displayed on the display panel; a control circuit for generating lighting instructions for the display panel based on the pixel data extracted from the pixel data storage circuit at a predetermined timing and supplying the lighting instructions to the driver circuit, the control circuit also generating the voltage control signal for changing the value of the supply voltage in accordance with a lighting rate (col. 6, line 47 to col. 7, line 47).

Young does not explicitly disclose the driving system comprising a power supply circuit for supplying a supply voltage to the driver circuit. However, Fig. 1 of Kasai teaches a display driving device comprising a power supply circuit (7) for supplying a supply voltage to the driver circuit (2, 3). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the driving system of Young to have a power supply circuit as taught by Kasai so as to provide a supply voltage to the display driving circuit for driving the display elements of the display panel.

As to claims 3, 11, Young teaches the control circuit calculates the lighting rate at least for one signal line (row electrode 10₂) of image data displayed on the display panel (col. 7, lines 1-5).

As to claims 4, 12, 20, Kasai teaches the light emitting elements are organic EL light emitting elements ([0006]).

As to claims 5 and 13, Young teaches the lighting rate is a percentage of the light emitting elements to be lit in accordance with the lighting instructions (col. 7, lines 1-6, none of the pixels to be lit reads on zero percent of the light emitting elements to be lit; all or almost all of pixel are to be lit reads on 100 percent of the light emitting elements to be lit).

As to claims 6, 14, Figs. 1 and 2 of Kasai teaches the organic EL elements are arranged in a matrix, and the drive circuit includes an anode driver (3) for a plurality of columns of organic EL elements and a cathode driver (2) for a plurality of row of organic EL elements. Fig. 5 of Young teaches the regulated supply voltage (correction voltage) is supplied to the anode driver (column driver 12).

As to claims 7 and 15, Young teaches the value of the supply voltage is increased when the lighting rate increases, and is decreased when the lighting rate decreases (col. 7, lines 6-8).

6. Claims 2, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young and Kasai as applied to claims 1 and 9 above, and further in view of Tachibana.

Young as modified by Kasai does not disclose the predetermined group of light emitting elements corresponds to one frame of image data displayed on the display panel.

However, Tachibana teaches a display device having a display rate detecting means for detecting the display rate on one display picture (one frame of image data) of the display panel (col. 5, lines 20-24). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the driving circuit of Young as modified by Kasai to calculate the lighting rate of one frame of image data as taught by Tachibana so as to provide an improvement in controlling a lighting time of pixels within a predetermined time in order to display an image with multiple gradations (col. 1, lines 8-10 of Tachibana).

7. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young and Kasai as applied to claims 1 and 9 above, and further in view of Honma (JP 2000181382).


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As to claims 8 and 16, Young as modified by Kasai does not disclose a predetermined value, and the control circuit regulating the value of the supply voltage when the lighting rate exceeds a predetermined value. However, Honma a display control device having a predetermined value (threshold lighting rate) and calculating a luminance correspondence lighting rate based on the threshold light rate. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the driving system of Young as modified by Kasai to set a predetermined value, and the control circuit regulating the value of the supply voltage when the lighting rate exceeds a predetermined value so as to "maintain use for a long period of time by making a luminance control panel variable by the number of lighting dots, thereby changing the luminance" (lines 2-3 of the abstract in Homan).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (571) 272-7693. The examiner can normally be reached on Monday-Friday from 8AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Regina Liang
Primary Examiner
Art Unit 2674

8/18/06